ECONOMICS 400h: HONORS ECONOMIC STATISTICS AND ECONOMETRICS

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This is the required introductory course in economic statistics for economics majors. It introduces students to the basic concepts of statistical description, probability theory, statistical inference and econometrics as they apply to economic analysis. In particular, the course will emphasize regression analysis, since economics students will be exposed to many regression-like analyses in their upper division economics courses. My goals for students in the course are twofold: (1) to achieve a rigorous understanding of the foundations of statistical theory, and (2) to gain real facility in performing statistical analysis on the computer. By the end of the course students will be both confident and capable using a sophisticated statistical software package to the point that they will be able to use it routinely in other courses and activities. *STOR 155 is a prerequisite for this course.*

The format of the course is lecture/discussion and laboratory. Most weeks the laboratory will take place when/where you wish. All you will need will be your computer and the Stata program on your computer. There will be a final exam (35% of the final grade), two midterm exams (23% each), a quiz on probability theory (4%), and laboratory/problem sets (15%). Part of the final exam may include a "final Stata exercise" to be completed at the end of the course. You *must complete the final Stata exercise before you will be allowed to take the final exam. There are no make-up exams for missed midterms.* Students with an *approved* excuse *for a maximum of one missed midterm exam* may have extra weight placed on the final exam, which must be taken at the regularly scheduled time and place.

Materials for Purchase:

Required Texts and Software:

Required material for this course consists of one book and a statistical software program (Stata). The Groebner text comes bundled with online access to MyStatLab, an online homework program that we will use. One of the following two packages (Groebner text + Stata program):

Package 1:

David F. Groebner, Patrick W. Shannon, Phillip C. Fry, and Kent D. Smith, "Business Statistics: A Decision-Making Approach. (9th Edition) Prentice-Hall 2014. ISBN:9780133098785 – (Printed textbook + MyStatlab with ebook) + + Stata program. (Also available as printed 3-hole notebook text + MyStatlab with ebook ISBN: 9780321869531 + Stata)

Package 2:

David F. Groebner, Patrick W. Shannon, Phillip C. Fry, and Kent D. Smith, "Business Statistics: A Decision-Making Approach. (9th Edition) Prentice-Hall 2014. ISBN:9780321921486 – (MyStatlab with ebook only). + Stata program.

You could buy a used copy of the Groebner book (9th edition), but you must also buy *MyStatlab* and the combination could be more expensive than the packages above.

Required Statistical Software: This course will provide intensive instruction in the use of the Stata statistical package. Stata is an extraordinarily powerful statistical tool that comes in various versions. Ordering instructions and descriptions of the options available are contained in a separate handout. **Purchase of Stata is required for all enrolled students. I will assume that you have Stata available on your computer.**

Recommended Manual:
Lab/Reference Manual: Lawrence C. Hamilton, *Statistics with Stata: Updated for Version 12.* Brooks/Cole Cengage Learning 2013. ISBN13: 978-0-8400-6463-9. (Also available as an e-book see http://www.cengagebrain.com/shop/search/9780840064639)

Your E-mail Address: Every student must have a functioning UNC e-mail address, and you *must* be reachable through that address. Your UNC e-mail address must be the address that accompanies the official UNC on-line class roll.

Mac vs. PC: The University provides and supports Windows PCs to faculty. All course material is guaranteed to work on Windows PCs. Mac users having trouble with course material should consult User Services in the basement of the Undergraduate Library. In particular, the standard web browser on the Mac (Safari) apparently does not refresh web pages automatically. If you're having trouble accessing course web material, try *refreshing* the course web page.

A course outline and schedule follow. Both are *tentative* at this point. If we deviate from the schedule, I will keep you informed as to where you ought to be.

Tentative Course Outline

Tuesday			Thursday		
Activity/Date	**GSFS text**	**Hamilton****	**Activity/Date**	**GSFS text**	**Hamilton****
			1/12: Describing Data	Ch 1 Ch 2	Ch. 1 Ch. 3: Graphs
1/17: Describing Data	Ch. 2 Ch. 3	Ch. 5: Summary Statistics	***1/19 Quiz on Probability Theory***	This quiz is designed to assess your retention of basic probability theory which will not be covered during lecture. The material on this quiz will cover topics in GSFS Ch.4 and Turchi's lecture (found on Sakai)	
1/24: Describing Data	Ch 3	Ch. 2 Data Mgmt*	*1/26: Discrete Prob. Distributions*	Ch. 5	Ch. 2 Data Mgmt*
1/31: Discrete Prob. Distributions	Ch. 5	Ch. 2 Data Mgmt*	*2/2: Continuous Distributions*	Ch. 6	Ch. 2 Data Mgmt*
2/7: Sampling Distributions	Ch. 7	Ch. 2 Data Mgmt*	*2/9: Sampling Distributions*	Ch 7	Ch. 2 Data Mgmt*
2/14: Sampling Distributions	Ch. 7		*2/16: Estimating Means & Proportions*	Ch 8	
2/21: Estimating Means & Proportions	Ch 8		*2/23: Testing Hypotheses*	Ch. 9	
2/28: Testing Hypotheses	Ch. 9		***3/2: Midterm 1***		
3/7: Testing Hypotheses	Ch. 9		*3/9: Testing Hypotheses*	Ch. 9, 10	
3/14: Spring Break			***3/16: Spring Break***		
3/21: Testing Hypotheses	Ch. 10, 11		*3/23: Linear Regression*	Ch. 14	Ch. 7
3/28: Linear Regression	Ch. 14	Ch. 7	*3/30: Linear Regression*	Ch. 14	Ch. 7
4/4: Multiple Regression	Ch. 15	Ch. 7,8	***4/6: Midterm 2***		
4/11: Multiple Regression	Ch. 15	Ch. 7,8	*4/13: Multiple Regression*	Ch. 15	Ch. 7,8
4/18: Multiple Regression	Ch. 15	Ch. 7,8	*4/20: Multiple Regression*	Ch. 15	Ch. 7,8
4/25: Topics in Multiple Regression	TBA		*4/27: Topics in Multiple Regression*	TBA	

* When working on Hamilton's Chapter 2, Data Management, you may find the following online tutorial helpful:
http://www.cpc.unc.edu/research/tools/data_analysis/statatutorial

Another very useful web site for Stata can be found at:

http://www.ats.ucla.edu/stat/stata/default.htm

** Readings from Hamilton, while optional, are highly recommended. Other readings from Hamilton will be referenced in conjunction with the Stata exercises.

☠ **Final Exam: Friday, May 5th @ 8:00 A.M. in our classroom**